

Powers of Powers

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Simplify.

1) $(2^2)^4$

2) $(3^3)^2$

3) $((-3)^3)^4$

4) $(3^4)^4$

5) $(x^4y^3)^3$

6) $(uv)^3$

7) $(-2x)^2$

8) $(4x^4y^3)^2$

9) $(2ba^3)^4$

10) $(4b^3)^2$

11) $(4ab^4c^4)^3$

12) $(yx^2z^4)^4$

13) $-2x^4y^4 \cdot (2x^3y^5)^5$

14) $x^2 \cdot (2x^5y^4)^3$

Are the following expressions equivalent? Show work to support your answer!

$$(3a^2)^5 \cdot 2a$$

$$(3a^2 \cdot 2a)^5$$

Find Tommy's mistake!

$$(-4x^2)^4$$

$$= -4^4 x^8$$

$$= -256x^8$$